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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,267	07/30/2001	Rino A. Feduzi	56649US002	2413

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EXAMINER

MUROMOTO JR, ROBERT H

ART UNIT	PAPER NUMBER
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3765

DATE MAILED: 07/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/918,267

Applicant(s)

FEDUZI ET AL.

Examiner

Robert H Muromoto, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-62 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-62 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

The abstract of the disclosure is objected to because the recitation "The disclosure provides..." and the abstract should not contain language pertaining to the purported merits of the invention. Correction is required. See MPEP § 608.01(b).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-26, and 31-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bingham Re. 30,892 in view of White et al. WO 02/103,108.

Bingham teaches retroreflective treated fabrics that use a very sparse retroreflective printing treatment, which leaves the fabric with nearly its full original appearance as well as hand, feel, and breathability. The smaller the individual retroreflective areas and the lower the density of microspheres over the area of the fabric, the more inconspicuous and the less effect on hand, feel, and breathability (col. 8, lines 20-25). "In general, to minimize effects..., the smallest surface dimension of the continuous (retroreflective) areas of the treatment on the fabric should be less than .5 cm, preferably less than .25 cm, and more preferably less than 1 mm (col. 8, lines 24-34)."

As to the method of the instant invention, the method Bingham uses is a printing method, where a binder material (adhesive) only is printed in a scattered pattern onto cloth. Then, while the binder material is tacky, hemispherical reflectorized microspheres are cascaded onto the cloth. Where they strike a dot of tacky binder material, the microspheres become adhered to the fabric, which leaves the fabric with nearly its full original appearance as well as hand, feel, and breathability.

Although Bingham teaches these limitations of the claims above Bingham does not state that the thermal decay and vapor permeability are substantially the same. Bingham does teach that the breathability of the treated fabric retains "nearly its full original appearance, hand, feel, and breathability" which the examiner feels is within the same scope as the recited "substantially equal thermal decay" and "vapor permeability" limitations in the instant invention. Therefore it would have been obvious to one of ordinary skill in the art to use the teachings of Bingham to provide a treated retroreflective fabric which shows substantially the same thermal decay and vapor permeability as the untreated fabric to provide a garment with better comfort characteristics.

Also not taught in Bingham are the surface area of non-retroreflective areas to the retroreflective areas, the brightness of the retroreflective material, use on a firefighters garment and a thermal control garment, configuration of the pattern, and that the reflective material being florescent.

White does teach retroreflective fabrics and the method of production. Retroreflective fabrics are made by printing or coating on to a fabric a retroreflective ink

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or coating. Prior art fabrics have come in the form of tapes, made by embedding microbeads in an adhesive layer on a backing and metallising the exposed hemispheres of the microbeads, then transferring the microbeads to an adhesive coated tape so that the metallised surfaces are embedded in the adhesive in the tape, the microbeads now being all aligned.

White uses a print or coating in a dot pattern, which is a pattern of dots, e.g., circular, square, rectangular, triangular or other shapes separated by blank areas. This kind of printing or coating leaves uncoated areas which enable the fabric to breathe and allow moisture management, which is of particular importance when used by firefighters and others working in hot environments (thermal control). Thus one implementation of White is a fabric which is breathable and has moisture management properties adhered thereto, by a transfer adhesive, one or more arrays of dots each comprising a plurality of aligned, retroreflective microbeads in such a way that the fabric is exposed for breathing/moisture management at interstices between dots. Typically, within a particular array the minimum area of exposed breathable fabric is at least about 5%, and typically at least about 30% of pattern area. The maximum area of exposed breathable fabric may be up to at least about 95% and typically about 85%, of pattern area.

Therefore it would have been obvious to use the teachings of White to modify the retroreflective fabric of Bingham to provide a bright colored (florescent) breathable, moisture management fabric useful to firefighters and those in hot environments.

With respect to the limitations of the percentage of surface area of the non-retroreflective region (claims 2-4, 18, 19, 21, 25,26, 34-36, 48, 49, 51, 53, 54), reflective brightness (claims 7, 8, 25, 26, 39, 40, 53, 54, 56), pattern (claims 12-16, 42-45), the specification contains no disclosure of either the critical nature of the claimed limitations nor any unexpected results arising therefrom, and that as such the limitations were arbitrary and therefore obvious. Such unsupported limitations cannot be a basis for patentability, since where patentability is said to be based upon particular dimensions or another variable in the claim, the applicant must show that the chosen variables are critical. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934 (Fed. Cir. 1990). One having ordinary skill in the art would be able to determine through routine experimentation the ideal levels of fiber blend, fiber density, and fabric absorption for a particular application.

Claims 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bingham in view of White and further in view of Aldridge et al.

Although the combined teachings above teach essentially all of the limitations of the instant invention they do not teach the use of the breathable reflective material in multilayered protective garments.

However, Aldridge teaches a firefighter's garment that uses retroreflective trim for warning purposes on the outer shell of the garment. Additionally, the inner layers of the garment are a complex multilayered design common to protective garments that use moisture barriers, thermal barriers, permeable layers.

Therefore it would have been obvious to add the retroreflective material above to any garment, much less firefighters' garments to provide the garment with the ability to reflect light which is useful in many applications where the user needs to be seen.


***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert H Muromoto, Jr. whose telephone number is 703-306-5503. The examiner can normally be reached on 8-530, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Calvert can be reached on 703-305-1025. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9302 for regular communications and 703-872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.

bhm  
July 9, 2003

  
JOHN J. CALVERT  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700